type a plus sign (+) inside this box -> + PTO/SB/81 (02-01) Approved for use through 10/31/2002. OMB 0651-0035

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
ider the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number. **Application Number** Filing Date First Named Inventor Erik Lier **POWER OF ATTORNEY OR** PARTLY INTERLEAVED PHASED ARRAYS **AUTHORIZATION OF AGENT** Title WITH DIFFERENT ANTENNA ELEMENTS IN CENTRAL AND OUTER REGION **Group Art Unit Examiner Name Attorney Docket Number** 040092-020010US I hereby appoint: ☑ Practitioners at Customer Number Practitioner(s) named below: PATENT TRADEMARK OFFICE Name Registration Number as my/our attorney(s) or agent(s) to prosecute the application identified above, and to transact all business in the United States Patent and Trademark Office connected therewith. Please change the correspondence address for the above-identified application to: ☐ The above-mentioned Customer Number. OR ☐ Practitioners at Customer Number Firm or Individual Name Address Address City State ZIP

> I am the: Applicant/Inventor. Assignee of record of the entire interest. See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96). SIGNATURE of Applicant or Assignee of Record Name Lester W. Schiefelbein, Jr. V.P. and General Counsel Lockheed Martin Space-Systems Company - Space and Strategic Missiles d/b/a Lockheed Martin Corporation Signature Date 03 NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required.

Fax

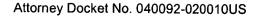
Burden Hour Statement: This form is estimated to take 3 minutes to complete. Time will vary depending upon the needs of the individual case. Any Comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents,

Submit multiple forms if more than one signature is required, see below\*.

DE 7108287 v1

\*Total of one form is submitted.

Country Telephone



O SE O R TOTAL TRANSPORT Applic

Application No./Patent No.: Filed/Issue Date:  Entitled: PARTLY INTERLEAVED PHASED ARRAYS WITH DIFFERENT ANTENNA ELEMENTS IN CENTRA OUTER REGION  Lockheed Martin Corporation , a Maryland corporation (Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government states that it is:  1.	
Entitled: PARTLY INTERLEAVED PHASED ARRAYS WITH DIFFERENT ANTENNA ELEMENTS IN CENTRA OUTER REGION  Lockheed Martin Corporation, a Maryland corporation	
OUTER REGION         Lockheed Martin Corporation       , a Maryland corporation         (Name of Assignee)       (Type of Assignee, e.g., corporation, partnership, university, government states that it is:         1.	
(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government a states that it is:  1.   the assignee of the entire right, title, and interest; or  an assignee of less than the entire right, title and interest. The extent (by, percentage) of its ownership interest is%	agency, etc.)
(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government a states that it is:  1.   the assignee of the entire right, title, and interest; or  an assignee of less than the entire right, title and interest. The extent (by, percentage) of its ownership interest is%	agency, etc.)
<ol> <li>the assignee of the entire right, title, and interest; or</li> <li>an assignee of less than the entire right, title and interest.         The extent (by, percentage) of its ownership interest is%     </li> </ol>	
2. an assignee of less than the entire right, title and interest.  The extent (by, percentage) of its ownership interest is%	
The extent (by, percentage) of its ownership interest is%	
in the patent application/patent identified above by virtue of either:	
A. An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel, Frame, or for which a copy thereof is attached.	
OR	
B. A chain of title from the inventor(s), of the patent application/patent identified above, to the current assign as shown below:	iee
1. From: To :	
The document was recorded in the United States Patent and Trademark Office at	
Reel, Frame, or for which a copy thereof is attached.	
2. From: To :	
The document was recorded in the United States Patent and Trademark Office at Reel, Frame, or for which a copy thereof is attached.	
3. From: To :	
The document was recorded in the United States Patent and Trademark Office at	
Reel, Frame, or for which a copy thereof is attached.	
Additional documents in the chain of title are listed on a supplemental sheet.	
☐ Copies of assignments or other documents in the chain of title are attached.  [NOTE: A separate copy (i.e., the original assignment document or a true copy of the original document) must be submitted to Assignment Division in accordance with 37 CFR Part 3, if the assignment is to be recorded in the records of the USPTO. See MPEP 302.8]	
The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.	
8.1.03	
Date Lester W. Schiefelbein, Jr.  Typed or printed pame	
WILL	
Signature	
V.P. and General Counsel	

Burden Hour Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231. DE 7108290 v1



Form PTO-1595   (Rev. 10-02)	Recordation Form Cover Sheet		U.S. Department of Commerce		
OMB No. 0651-0027 (exp. 5/31/2002)	PATENTS ONLY		U.S. Patent and Trademark Office		
$lackbox{}{f ar{Y}}$ , $lackbox{}{f ar{Y}}$ , $lackbox{}{f ar{Y}}$ , $lackbox{}{f ar{Y}}$					
To the Honorable Commissioner of Patents and Trademarks. Please record the attached original documents or copy thereof					
Name of conveying party(ies):	2. Nar	me and address of recei	iving.party(ies)		
Erik Lier and Anthony W. Jacom	b-Hood Na	me: Lockheed Martin	1 Corporation		
Additional name(s) of conveying party(ies) attached?	? □ Yes ☒ No. Inte	ernal Address:			
3. Nature of conveyance:		eet Address: 6801 Roc	11-1 D.::		
	Merger		_		
☐ Security Agreement ☐ C	Change of Name	y: Bethesda St	tate: MD ZIP: 20817		
Other:	Additio	nal name(s) and addres	ss(es) attached? ☐ Yes 🛭 No		
Execution Date: July 8, 2003					
4. Application number(s) or patent number(s):					
If this document is being filed together with a new application, the execution date of the application is: July 8, 2003					
A. Patent Application No(s):	В.	Patent No(s):			
Additional numbers attached?  Yes No					
<ol><li>Name and address of party to whom corres concerning document should be mailed:</li></ol>	spondence 6. Tota	ıl number of applications	s and patents involved 1		
concerning document should be mailed.					
Name: Chad S. Hilyard	7. Tota	al fee (37 CFR 3.41):	<del></del> \$40.00		
TOWNSEND AND TOWNSEND AN	ND CREW LLP		<u> • • • • • • • • • • • • • • • • • • •</u>		
Two Embarcadero Center, 8 <sup>th</sup> Floo	_	☐ Enclosed	, L		
San Francisco, California 94111-3834 (303) 571-4000		Authorized to     Aut	narged to deposit account		
	8 Den	osit Columber: 20	2 4 4 0 0		
	J. 30p.	JSILOCOU TOITIDET. 2.	0-1430		
	(Attach c	luplicate copy of this page	if paying by deposit account)		
	DO NOT USE THIS SP	ACE			
9. Statement and signature.					
To the best of my knowledge and belief, the is a true copy of the original document.	foregoing information is true	and correct and any ati	tached copy		
	()/////////////////////////////////////	1	4 5-		
Chad S. Hilyard	Un Ala	$\underline{\mathcal{V}}$	July 22, 2003		
Name of Person Signing Atty. Reg. No. 40,647	Signature /		Date		
Total number	r of pages including cover sheet.	attachments and docume	ata: a		

Mail documents to be recorded with required cover sheet information to:

Mail Stop Assignment Recordation Services

Director of the U.S. Patent and Trademark Office

P.O. Box 1450

Attorney Docket No.: 040092-020010US

Client Reference No.: 80PC3656

## ASSIGNMENT OF PATENT APPLICATION

JOINT

WHEREAS, Erik Lier of 130 Twining Bridge Road, Newtown, PA 18940 and Anthony W. Jacomb-Hood of 876 Henry Drive, Yardley, PA 19067, hereinafter referred to as "Assignors," are the inventors of the invention described and set forth in the below-identified application for United States Letters Patent:

Title of Invention:

PARTLY INTERLEAVED PHASED ARRAYS WITH DIFFERENT ANTENNA ELEMENTS IN CENTRAL AND

OUTER REGION

Date(s) of execution of Declaration: July 8, 2003

Filing Date:

July 22, 2003

Application No.: 10/625,810

; and

WHEREAS, Lockheed Martin Corporation, a corporation of the state of Maryland, located at 6801 Rockledge Drive, Bethesda, MD 20817, hereinafter referred to as "ASSIGNEE," is desirous of acquiring an interest in the invention and application and in any U.S. Letters Patent and Registrations which may be granted on the same;

For good and valuable consideration, receipt of which is hereby acknowledged by Assignors, Assignors have assigned, and by these presents do assign to Assignee all right, title and interest in and to the invention and application and to all foreign counterparts (including patent, utility model and industrial designs), and in and to any Letters Patent and Registrations which may hereafter be granted on the same in the United States and all countries throughout the world, and to claim the priority from the application as provided by the Paris Convention. The right, title and interest is to be held and enjoyed by Assignee and Assignee's successors and assigns as fully and exclusively as it would have been held and enjoyed by Assignors had this Assignment not been made, for the full term of any Letters Patent and Registrations which may be granted there only of any division, renewal, continuation in whole or in part, substitution, conversion, reissue, prolongation, extension thereof.

Assignors further agree that they will, without charge to essigne out at Assignee's expense, (a) cooperate with Assignee in the prosecution of U.S. Patent applications and foreign counterparts on the invention and any improvements, (b) execute, verify, acknowledge and deliver all such further papers, including patent applications and instruments of transfer, and (c) perform such other acts as Assignee lawfully may request to obtain or maintain Letters Patent and Registrations for the invention and improvements in any and all countries, and to vest title thereto in Assignee, or Assignee's successors and assigns.

Assignors hereby authorize and request Townsend and Townsend and Crew LLP, Two Embarcadero Center, 8th Floor, San Francisco, CA 94111-3834, to insert herein above the application number and filing date of said application when known.

IN TESTIMONY WHEREOF, Assignors have signed their names on the dates indicated.

Dated: 8 July 2003

Anthony W. Jacomb-Hood

DE 7108256 vl